UVM ECHO -- Chronic Pain

Facilitators:
• Mark Pasanen, MD
• Liz Cote

Faculty:
• Patti Fisher, MD
• Charles MacLean, MD
• Sanchit Maruti, MD
• Rich Pinckney, MD, MPH
• Carlos Pino, MD
• Jill Warrington, MD
Introduction to ZOOM

• Mute microphone when not speaking
  • If using phone for audio, please mute computer
  • If using phone,*6 is used to mute/unmute

• Position webcam effectively (and please enable video)

• Test both audio & video

• Use “chat” function for:
  • Attendance—type name and organization of each participant upon entry to each teleECHO session
  • Technical issues

• We need your input!
  • Use “raise hand” feature; the ECHO team will call on you
  • Please speak clearly
No Relevant Disclosures

Planners:
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• Jill Warrington, MD, PhD
CME Disclosures

Northern Vermont Area Health Education Center (AHEC) is approved as a provider of Continuing Medical Education (CME) by the New Hampshire Medical Society, accredited by the ACCME. Northern Vermont AHEC designates this educational activity for a maximum of 1.5 Category 1 Credits toward the AMA Physician’s Recognition Award.

Interest Disclosures:

As an organization accredited by the ACCME to sponsor continuing medical education activities, Northern VT AHEC is required to disclose any real or apparent conflicts of interest (COI) that any speakers may have related to the content of their presentations.
• RECORDING OF SESSION TO BEGIN
Cannabis for Chronic Pain

Mark E. Pasanen, MD, FACP
Associate Professor of Medicine
Program Director, Internal Medicine Residency
Division Chief, Hospital Medicine
Objectives

• Review brief history of Cannabis use
• Cannabis basics
• Review current patterns of use in Vermont
• Understand Vermont regulations
  • Medical marijuana
  • Recreational Use
• Review efficacy for chronic pain
• Review potential adverse effects
Brief History

- Used as food/textiles for thousands of years
- 2700 BC - first recorded medicinal use (China)
- 1798 - Napoleon declares total prohibition
- 1868 - Egypt outlaws ingestion
- 1970 - Controlled Substance Act in US
  - “No medical use” “Not safe to use under medical supervision”
- 1975 - Compassionate use program in US
- 1996 - California allows medical marijuana
- 2003 - Canada offers medical marijuana
- 2004 - Vermont passes medical marijuana
Cannabis Basics

Two main plants:
- Can be smoked, vaped, ingested, applied topically, etc.
- Indica
  - Reportedly more sedating, “body high”
- Sativa
  - Reportedly more stimulating, psychoactive high

Numerous cannabinoids
- THC (tetrahydrocannabinol):
  - Binds CB1 receptors – brain, nervous system
- CBD (cannabidiol):
  - Not stimulating/high
  - Being used for anxiety, pain
- THC:CBD ratio often reported
Vermont Marijuana Use

Marijuana Use in Past 30 Days
Vermont Adults, 2007 - 2016

Mean Days Used Marijuana in Last Month
Vermont Adults Recently Using Marijuana, 2011 - 2016
Frequency of Marijuana Use
Vermont Adults Recently Using Marijuana, 2011-2016

- 1-2 days
- 3-9 days
- 10+ days

<table>
<thead>
<tr>
<th>Year</th>
<th>1-2 days</th>
<th>3-9 days</th>
<th>10+ days</th>
</tr>
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<tbody>
<tr>
<td>2011</td>
<td>31%</td>
<td>25%</td>
<td>44%</td>
</tr>
<tr>
<td>2012</td>
<td>27%</td>
<td>27%</td>
<td>46%</td>
</tr>
<tr>
<td>2013</td>
<td>22%</td>
<td>21%</td>
<td>57%</td>
</tr>
<tr>
<td>2015</td>
<td>22%</td>
<td>16%</td>
<td>62%</td>
</tr>
<tr>
<td>2016</td>
<td>18%</td>
<td>19%</td>
<td>63%</td>
</tr>
</tbody>
</table>

Health Status by Marijuana Use
Vermont Adults, 2016*

- Recent Marijuana Use
- No Recent Marijuana Use
- Regular Marijuana User
- Not Regular Marijuana User

<table>
<thead>
<tr>
<th>Status</th>
<th>Recent Marijuana Use</th>
<th>No Recent Marijuana Use</th>
<th>Regular Marijuana User</th>
<th>Not Regular Marijuana User</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fair/Poor Health</td>
<td>19%*</td>
<td>13%</td>
<td>25%*</td>
<td>9%</td>
</tr>
<tr>
<td>Poor Physical Health</td>
<td>14%</td>
<td>11%</td>
<td>16%</td>
<td>10%</td>
</tr>
<tr>
<td>Poor Mental Health</td>
<td>23%*</td>
<td>10%</td>
<td>28%*</td>
<td>13%</td>
</tr>
</tbody>
</table>
Vermont Medical Marijuana

• “Health Care Professionals are not prescribing or recommending the use of marijuana. They are verifying the nature of the disease and its symptoms.”
  • Cancer, Multiple sclerosis, HIV/AIDS, Crohn’s, Parkinson’s
  • Glaucoma
    • if the disease or the treatment results in severe, persistent, and intractable symptoms.
  • PTSD (requires the Mental Health Care Provider Form)
  • A disease, medical condition, or its treatment that is chronic, debilitating, and produces one or more of the following intractable symptoms:
    • cachexia or wasting syndrome
    • chronic pain (45-80% of patients)
    • severe nausea
    • seizures
Vermont Law 7/1/18

• 9th State to legalize recreational marijuana

• Legalizing marijuana for adults age 21 and older.
  • allows for the possession of up to:
    • 1 ounce of marijuana
    • 2 mature and 4 immature plants.

• Vermont’s law did NOT create a state marketplace for sales of the drug
The Effects of Cannabis Among Adults With Chronic Pain and an Overview of General Harms

A Systematic Review

Shannon M. Nugent, PhD; Benjamin J. Morasco, PhD; Maya E. O’Neil, PhD; Michele Freeman, MPH; Allison Low, BA; Karli Kondo, PhD; Camille Elven, MD; Bernadette Zakher, MBBS; Makalapua Motu’apuaka, BA; Robin Paynter, MLIS; and Devan Kansagara, MD, MCR

Background: Cannabis is increasingly available for the treatment of chronic pain, yet its efficacy remains uncertain.

Purpose: To review the benefits of plant-based cannabis preparations for treating chronic pain in adults and the harms of cannabis use in chronic pain and general adult populations.

Data Sources: MEDLINE, Cochrane Database of Systematic Reviews, and several other sources from database inception to March 2017.

Study Selection: Intervention trials and observational studies, published in English, involving adults using plant-based cannabis preparations that reported pain, quality of life, or adverse effect outcomes.

Data Extraction: Two investigators independently abstracted study characteristics and assessed study quality, and the investigator group graded the overall strength of evidence using standard criteria.

Data Synthesis: From 27 chronic pain trials, there is low-strength evidence that cannabis alleviates neuropathic pain but insufficient evidence in other pain populations. According to 11 systematic reviews and 32 primary studies, harms in general population studies include increased risk for motor vehicle accidents, psychotic symptoms, and short-term cognitive impairment. Although adverse pulmonary effects were not seen in younger populations, evidence on most other long-term physical harms, in heavy or long-term cannabis users, or in older populations is insufficient.

Limitation: Few methodologically rigorous trials; the cannabis formulations studied may not reflect commercially available products; and limited applicability to older, chronically ill populations and patients who use cannabis heavily.

Conclusion: Limited evidence suggests that cannabis may alleviate neuropathic pain in some patients, but insufficient evidence exists for other types of chronic pain. Among general populations, limited evidence suggests that cannabis is associated with an increased risk for adverse mental health effects.

Primary Funding Source: U.S. Department of Veterans Affairs. (PROSPERO: CRD42016033623)

Annals.org

For author affiliations, see end of text.
This article was published at Annals.org on 15 August 2017.
<table>
<thead>
<tr>
<th>Trial: Author, Year (Reference)</th>
<th>Pain Type</th>
<th>N</th>
<th>Intervention Formulation; Dosage; Study Design</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrams et al, 2007 (33)</td>
<td>Neuropathic sensory, HIV-associated</td>
<td>55</td>
<td>Smoked THC, 4%: 1 cigarette/d (0.9 g) ≤48 sprays/d; crossover</td>
<td>12 d</td>
</tr>
<tr>
<td>Berman et al, 2004 (30)</td>
<td>Neuropathic brachial plexus avulsion</td>
<td>48</td>
<td>Nabilong (THC oromucosal spray)</td>
<td>2 wk (no washout)</td>
</tr>
<tr>
<td>Ellis et al, 2009 (31)</td>
<td>Neuropathic sensory, HIV-associated</td>
<td>34</td>
<td>Smoked THC, started at 4% and adjusted as necessary: 4 smoking sessions/d; crossover</td>
<td>5 d (2-wk washout)</td>
</tr>
<tr>
<td>Lynch et al, 2014 (24)</td>
<td>Neuropathic chemotherapy-induced</td>
<td>18</td>
<td>Nabilong: ≤12 sprays/d</td>
<td>4 wk (2-wk washout)</td>
</tr>
<tr>
<td>Notcutt et al, 2004 (43)</td>
<td>Mostly neuropathic; 47% MS</td>
<td>34</td>
<td>Oral sublingual THC, 2.5 mg oromucosal spray</td>
<td>8 wk</td>
</tr>
<tr>
<td>Nurmikko et al, 2007 (35)</td>
<td>Neuropathic pain with allodynia</td>
<td>125</td>
<td>Nabilong: ≤98 sprays/d</td>
<td>5 wk</td>
</tr>
<tr>
<td>Selvarajah et al, 2010 (26)</td>
<td>Neuropathic diabetic peripheral</td>
<td>30</td>
<td>Nabilong: maximum unclear</td>
<td>12 wk</td>
</tr>
<tr>
<td>Serpell et al, 2014 (27)</td>
<td>Neuropathic peripheral with allodynia</td>
<td>246</td>
<td>Nabilong: ≤24 sprays/d</td>
<td>15 wk</td>
</tr>
<tr>
<td>Wallace et al, 2015 (36)</td>
<td>Neuropathic diabetic peripheral</td>
<td>16</td>
<td>Vapozol: THC, 7%, 4%, or 1%; 4 h observation at each dose; crossover</td>
<td>4 h (2-wk washout)</td>
</tr>
<tr>
<td>Ware et al, 2010 (39)</td>
<td>Neuropathic, postsurgical or posttraumatic</td>
<td>23</td>
<td>Smoked THC, 2.5%, 6%, or 9.4%; crossover</td>
<td>5 d (9-d washout)</td>
</tr>
<tr>
<td>Wilsey et al, 2008 (28)</td>
<td>Neuropathic</td>
<td>38</td>
<td>Smoked THC, 3.5% or 7%: 9 puffs; crossover</td>
<td>6 h (3- to 21-d washout)</td>
</tr>
<tr>
<td>Wilsey et al, 2013 (40)</td>
<td>Neuropathic, peripheral</td>
<td>39</td>
<td>Vapozol: THC, 1.29% or 3.53%; 4 puffs at 1 h after baseline, 4 to 8 puffs at 3 h; crossover</td>
<td>6 h (3- to 7-d washout)</td>
</tr>
<tr>
<td>Wilsey et al, 2016 (47)</td>
<td>Neuropathic, spinal cord injury</td>
<td>42</td>
<td>Vapozol: THC, 2.9% or 6.7%; 400 mg using Folitin Puff Procedure at 8 to 12 puffs over 240 min, adaptable dose design</td>
<td>8 h</td>
</tr>
<tr>
<td>Collin et al, 2010 (22)</td>
<td>MS</td>
<td>337</td>
<td>Nabilong: ≤24 sprays/d</td>
<td>14 wk</td>
</tr>
<tr>
<td>Corey Bloom et al, 2012 (37)</td>
<td>MS</td>
<td>37</td>
<td>Smoked THC, 4%: one 800-mg cigarette</td>
<td>3 d (11-d washout)</td>
</tr>
<tr>
<td>Langford et al, 2013 (41)</td>
<td>MS</td>
<td>339</td>
<td>Nabilong: ≤12 sprays/d</td>
<td>14 wk</td>
</tr>
<tr>
<td>Robj et al, 2005 (42)</td>
<td>MS</td>
<td>66</td>
<td>Nabilong: ≤98 sprays/d</td>
<td>5 wk</td>
</tr>
<tr>
<td>Van Amerongen et al, 2017 (45)</td>
<td>MS</td>
<td>24</td>
<td>Orally ingested THC, 99% (EPC002A, Namisol): 1.5 or 5 mg 3 times/d</td>
<td>2 wk</td>
</tr>
<tr>
<td>Wade et al, 2003 (44)</td>
<td>MS (67%)</td>
<td>24</td>
<td>Pump-action sublingual spray delivering 2.5 mg THC, 2.5 mg CBD, or 2.5 mg each; ≤120 mg/d; crossover</td>
<td>2 wk (no washout)</td>
</tr>
<tr>
<td>Wade et al, 2004 (38)</td>
<td>MS</td>
<td>160</td>
<td>Nabilong: ≤98 sprays/d</td>
<td>6 wk</td>
</tr>
<tr>
<td>Zajicke et al, 2003 (32)</td>
<td>MS</td>
<td>657</td>
<td>THC/CBD capsules: ≤25 mg/d</td>
<td>15 wk</td>
</tr>
<tr>
<td>Zajicke et al, 2012 (29)</td>
<td>MS</td>
<td>279</td>
<td>THC/CBD capsules: ≤25 mg/d</td>
<td>12 wk</td>
</tr>
<tr>
<td>Johnson et al, 2010 (23)</td>
<td>Cancer</td>
<td>60</td>
<td>Nabilong: ≤98 sprays/d</td>
<td>2 wk</td>
</tr>
<tr>
<td>Noyes et al, 1975 (34)</td>
<td>Cancer</td>
<td>58</td>
<td>THC/CBD capsules: 5, 10, or 15 mg; crossover</td>
<td>1 d (no washout)</td>
</tr>
<tr>
<td>Portenoy et al, 2012 (25)</td>
<td>Cancer</td>
<td>360</td>
<td>Nabilong: ≤10 sprays/d</td>
<td>9 wk</td>
</tr>
<tr>
<td>de Vries et al, 2016 (46)</td>
<td>Abdominal pain (includes chronic pancreatitis, postsurgical pain)</td>
<td>65</td>
<td>Orally ingested THC, 99% (EPC002A, Namisol); step-up phase: days 1 to 5, 3 mg 3 times/d; days 6 to 10, 5 mg 3 times/d; stable dose phase: days 11 to 52, 8 mg 3 times/d</td>
<td>7 wk</td>
</tr>
<tr>
<td>Blake et al, 2006 (21)</td>
<td>Rheumatoid arthritis</td>
<td>58</td>
<td>Nabilong: ≤98 sprays/d</td>
<td>5 wk</td>
</tr>
</tbody>
</table>
Benefits of Cannabis for Chronic Pain

- Neuropathic Pain:
  - 13 trials (mix of smoked, vapor, oromucosal spray)
  - No significant differences in continuous pain scales
  - Higher proportion had > 30% pain relief (RR 1.43)

- Multiple sclerosis/Cancer/Rheumatologic:
  - Inconsistent results
Risks of Cannabis Use (general population)

- No significant difference in serious adverse effects
- No significant differences in lung or head/neck cancer
  - However, often lump all routes of administration
- Association with development of psychosis/new-onset mania
- Short-term negative cognitive effects
- Moderate increase in motor vehicle accidents (35%)
New Review in Pain (accepted – not published)

- NNT for 30% reduction: 24 (CI 15-61)
- For 50% reduction, not significant
- Correlates to 3 mm on 100 mm visual scale
- NNH: 6 (CI 5-8)

“Appears unlikely that cannabinoids are highly effective medicines for chronic non-cancer pain.”
DSM-5 Criteria for a Substance-Use Disorder

According to DSM-5, a substance-use disorder may be an appropriate diagnosis when at least two of the following characteristics occur within a 12-month period and cause significant impairment or distress:

- the quantity of the substance used or the amount of time spent using is often greater than intended;
- efforts to control use of the substance are unsuccessful due to a persistent desire for the substance;
- considerable time is spent using the substance, recovering from its effects, or attempting to obtain the substance;
- a strong desire, craving, or urge to use the substance is present;
- substance use interferes with major role obligations at work, school, or home;
- use of the substance continues despite harmful social or interpersonal effects caused or made worse by substance use;
- participation in social, work, or leisure activities is avoided or reduced due to substance use;
- substance use occurs in situations where substance use may be physically hazardous;
- continued substance use occurs even when the substance is causing physical or psychological problems or making these problems worse;
- tolerance for the substance develops, including a need for increasing quantities of the substance to achieve intoxication or desired effects or a noticeable decrease in effects when using the same amount of the substance;
- after heavy or sustained use of a substance, reduction in or abstinence from the substance results in withdrawal symptoms or precipitates resumption of use of the substance or similar substances to relieve or avoid withdrawal symptoms.

Adapted from APA (2013).
Cannabis Hyperemesis Syndrome

- Seen mainly in recreational cannabis users
  - Chronic daily use
  - Early age

- Symptoms:
  - Nausea, abdominal pain, thirst
  - Hot showers/bath help
  - Lasts hours-to-days
  - Cannabis can help improve symptoms → cycle

- Treatment:
  - IVF, anti-emetics, cessation of cannabis
Cannabis and Opiates

• Patients on long-term opioids
  • Nearly 40% use cannabis
    • Unclear if it helps pain/function
    • Typically in patient with higher pain scores/lower self-efficacy
  • May be increasing given regulatory changes/acceptance
• Concurrent opioid/cannabis use
  • May indicate higher risk for opioid misuse (Pain Med Oct 9, 2017)
• Does not appear to decrease opioid-withdrawal
• Medical cannabis laws:
  • Associated with reduction in Medicare opioid prescriptions (JAMA IM May 18)
  • Associated with lower opioid overdose mortality (JAMA IM Nov 14)
What are patients telling you?
• RECORDING TO BE STOPPED
Case Presentation

The discussion and materials included in this conference are confidential and privileged pursuant to 26VSA Section 1441-1443. This material is intended for use in improving patient care. It is privileged and strictly confidential and is to be used only for the evaluation and improvement of patient care.
ECHO Reminders

• Please complete evaluation forms for session

• CME will be processed once session evaluation form is received at UVM

• UVM Project ECHO materials available at www.vtahec.org

• Please contact us with any questions/suggestions
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  • Elizabeth.Cote@uvm.edu
  • ahec@uvm.edu

• THANKS TO EVERYONE !!!